General

Guideline Title

Nutrition in aging. In: Evidence-based geriatric nursing protocols for best practice.

Bibliographic Source(s)

DiMaria-Ghalili RA. Nutrition. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 439-52.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: DiMaria-Ghalili RA. Nutrition. In: Capezuti E, Zwicker D, Mezey M, Fulmer T, editor(s). Evidence-based geriatric nursing protocols for best practice. 3rd ed. New York (NY): Springer Publishing Company; 2008. p. 353-67.

Recommendations

Major Recommendations

Levels of evidence (I–VI) are defined at the end of the "Major Recommendations" field.

Parameters of Assessment

General

During routine nursing assessment, any alterations in general assessment parameters that influence intake, absorption, or digestion of nutrients should be further assessed to determine if the older adult is at nutritional risk. These parameters include the following:

- Subjective assessment, including present history, assessment of symptoms, past medical and surgical history, and comorbidities (University of Texas, School of Nursing, 2006 [Level VI]).
- Social history (University of Texas, School of Nursing, 2006 [Level VI]).
- Drug-nutrient interactions: drugs can modify the nutrient needs and metabolism of older people. Restrictive diets, malnutrition, changes in eating patterns, alcoholism, and chronic disease with long-term drug treatment are some of the risk factors in older adults that place them at risk for drug-nutrient interactions (National Collaborating Centre for Acute Care, 2006).
- Functional limitations (Pichard et al., 2004 [Level IV]).
- Psychological status (Pichard et al., 2004 [Level IV]).
- Objective assessment: physical examination with emphasis on oral exam (see the National Guideline Clearinghouse [NGC] summary of the Hartford Institute for Geriatric Nursing guideline Providing oral health care to older adults), loss of subcutaneous fat, muscle wasting, body mass index (BMI) (University of Texas, School of Nursing, 2006 [Level VI]), and dysphagia.

Dietary Intake

In-depth assessment of dietary intake during hospitalization may be documented with a dietary intake analysis (calorie count) (DiMaria-Ghalili & Amella, 2005 [Level V]).

Risk Assessment Tool

The Mini-Nutritional Assessment (MNA) should be performed to determine if an older hospitalized patient is either at risk for malnutrition or has malnutrition. The MNA determines risk based on food intake, mobility, BMI, history of weight loss, psychological stress, or acute disease and dementia, or other psychological conditions. If the score is 11 points or less, the in-depth MNA assessment should be performed (Guigoz, Lauque, & Vellas, 2002 [Level V]). See the "Availability of Companion Documents" field for the MNA tool.

Anthropometry

- Obtain an accurate weight and height through direct measurement. Do not rely on patient recall. If patient cannot stand erect to measure height, then either a demi-span measurement or a knee-height measurement should be taken to estimate height using special knee-height calipers. Height should never be estimated or recalled due to shortening of the spine with advanced age; self-reported height may be off by as many as 2.4 cm (Guigoz, Lauque, & Vellas, 2002 [Level V]).
- Weight history: a detailed weight history should be obtained along with current weight. Detailed weight history should include a history of weight loss, whether the weight loss was intentional or unintentional, and during what period. A loss of 10 pounds over a 6-month period, whether intentional or unintentional, is a critical indicator for further assessment (Boullata, 2004 [Level VI]; DiMaria-Ghalili & Amella, 2005 [Level V]).
- Calculate BMI to determine if weight for height is within normal range: 22 to 27. A BMI below 22 is a sign of undernutrition (Boullata, 2004 [Level VI]).

Visceral Proteins

Evaluate serum albumin, transferrin, and prealbumin, visceral proteins commonly used to assess and monitor nutritional status (DiMaria-Ghalili & Amella, 2005 [Level V]). However, keep in mind these proteins are negative acute-phase reactants, so during a stress state, the production is usually decreased. In an older, hospitalized patient, albumin levels may be a better indicator of prognosis than nutritional status (Salva et al., 2004 [Level V]).

Nursing Care Strategies (DiMaria-Ghalili & Amella, 2005 [Level V])

Collaboration

- Refer to dietitian if patient is at risk for undernutrition or has undernutrition.
- Consult with pharmacist to review patient's medications for possible drug-nutrient interactions.
- Consult with a multidisciplinary team specializing in nutrition.
- Consult with social worker, occupational therapist, and speech therapist as appropriate.

Alleviate Dry Mouth

- Avoid caffeine; alcohol and tobacco; dry, bulky, spicy, salty, or highly acidic foods.
- If patient does not have dementia or swallowing difficulties, offer sugarless hard candy or chewing gum to stimulate saliva.
- Keep lips moist with petroleum jelly.
- Frequent sips of water.

Maintain Adequate Nutritional Intake

Daily requirements for healthy older adults include 30 kcal/kg of body weight and 0.8 to 1 g/kg of protein per day, with no more than 30% of calories from fat. Caloric, carbohydrate, protein, and fat requirements may differ depending on degree of malnutrition and physiological stress.

Improve Oral Intake

- Assess each patient's ability to eat within 24 hours of admission (Jeffries, Johnson, & Ravens, 2011 [Level I]).
- Mealtime rounds to determine how much food is consumed and whether assistance is needed (Jeffries, Johnson, & Ravens, 2011 [Level I]).
- Limit staff breaks to before or after patient mealtimes to ensure adequate staff are available to help with meals (Jeffries, Johnson, & Ravens, 2011 [Level I]).
- Encourage family members to visit at mealtimes.

- Ask family to bring favorite foods from home when appropriate.
- Ask about patient food preferences and honor them.
- Suggest small, frequent meals with adequate nutrients to help patients regain or maintain weight (Capra et al., 2007 [Level I]).
- Provide nutritious snacks (Capra et al., 2007 [Level I]).
- Help patient with mouth care and placement of dentures before food is served (Jeffries, Johnson, & Ravens, 2011 [Level I]).

Provide Conducive Environment for Meals

- Remove bedpans, urinals, and emesis basin from rooms before mealtime.
- Administer analgesics and antiemetics on a schedule that will diminish the likelihood of pain or nausea during mealtimes.
- Serve meals to patients in a chair if they can get out of bed and remain seated.
- Create a more relaxed atmosphere by sitting at the patient's eye level and making eye contact during feeding.
- Order a late food tray or keep food warm if patients are not in their rooms during mealtime.
- Do not interrupt patients for round and nonurgent procedures during mealtimes.

Specialized Nutritional Support (American Society for Parenteral and Enteral Nutrition [ASPEN] Board of Directors and the Clinical Guidelines Task Force, 2002 [Level I])

- Start specialized nutritional support when a patient cannot, should not, or will not eat adequately and if the benefits of nutrition outweigh the associated risks.
- Prior to initiation of specialized nutritional support, review the patient's advanced directives regarding the use of artificial nutrition and hydration.

Provide Oral Supplements

- Supplements should not replace meals but be provided between meals and not within the hour preceding a meal and at bedtime (Capra et al., 2007 [Level I]; Wilson, Purushothaman, & Morley, 2002 [Level IV]).
- Ensure that oral supplement is at appropriate temperature (Capra et al., 2007 [Level I]).
- Ensure that oral supplement packaging is able to be opened by the patients (Capra et al., 2007 [Level I]).
- Monitor the intake of the prescribed supplement (Capra et al., 2007 [Level I]).
- Promote a sip style of supplement consumption (Capra et al., 2007 [Level I]).
- Include supplements as part of the medication protocol (Capra et al., 2007 [Level I]).

Nothing by Mouth (NPO) Orders

- Schedule older adults for test or procedures early in the day to decrease the length of time they are not allowed to eat and drink.
- If testing late in the day is inevitable, ask physician whether the patient can have an early breakfast.
- See American Society of Anesthesiologists (ASA) practice guideline regarding recommended length of time patients should be kept NPO for elective surgical procedures.

Follow-up Monitoring (Boullata, 2004 [Level VI])

Monitor for Gradual Increase in Weight Over Time

- Weigh patient weekly to monitor trends in weight.
- Daily weights are useful for monitoring fluid status.

Monitor and Assess for Refeeding Syndrome

- Carefully monitor and assess patients the first week of aggressive nutritional repletion.
- Assess and correct the following electrolyte abnormalities: hypophosphatemia, hypokalemia, hypomagnesemia, hyperglycemia, and hypoglycemia.
- Assess fluid status with daily weights and strict intake and output.
- Assess for congestive heart failure in patients with respiratory or cardiac difficulties.
- Ensure caloric goals will be reached slowly, more than 3 to 4 days to avoid refeeding syndrome when repletion of nutritional status is warranted.
- Be aware that refeeding syndrome is not exclusive to patients started on aggressive artificial nutrition, but may also be found in older adults with chronic, comorbid medical conditions and poor nutrient intake started with aggressive nutritional repletion via oral intake.

Definitions:

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

AGREE Next Steps Consortium (2009). Appraisal of guidelines for research & evaluation II. Retrieved from http://www.agreetrust.org/?o=1397.

Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. Applied Nursing Research, 11(4) 195-206.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Malnutrition

Guideline Category

Evaluation

Management

Prevention

Risk Assessment

Clinical Specialty

Family Practice

Geriatrics

Nursing

Nutrition

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Dietitians

Health Care Providers

Hospitals

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To provide a standard of practice protocol to improve indicators of nutritional status in order to optimize functional status and general well-being and promote positive nutritional status

Target Population

Hospitalized older adults who are malnourished or at risk for malnutrition

Interventions and Practices Considered

Assessment/Evaluation/Risk Assessment

1. General assessment
2. Assessment of dietary intake
3. Risk assessment: Mini Nutritional Assessment (MNA)
4. Anthropometry measurement
5. Evaluation of visceral proteins

Management

1. Collaboration with multidisciplinary team members
2. Dry mouth alleviation
3. Maintenance of adequate nutritional intake
4. Improvement of oral intake
5. Providing a conducive mealtime environment
6. Nutritional support
7. Oral supplementation
8. Managing nothing by mouth (NPO) orders

Major Outcomes Considered

- Nutritional status
- Functional status and general well-being

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Although the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (described in Chapter 1 of the original guideline document, *Evidence-based Geriatric Nursing Protocols for Best Practice,* 4th ed.) was created to critically appraise clinical practice guidelines, the process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus, the AGREE instrument has been expanded (i.e., AGREE II) for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A literature search was conducted to find the best available evidence for each clinical question addressed. The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice protocol being developed.

In addition to rating each literature citation as to its level of evidence, each citation was given a general classification, coded as "Risks," "Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

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Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Not stated

Evidence Supporting the Recommendations

References Supporting the Recommendations

ASPEN Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. JPEN J Parenter Enteral Nutr. 2002 Jan-Feb;26(1 Suppl):1SA-138SA. PubMed

Boullata J. Drug-nutrient interactions. In: Worthington PH, editor(s). Practical aspects of nutritional support: an advanced practice guide. Philadelphia (PA): Saunders; 2004. p. 431-54.

Capra S, Collins C, Lamb M, Vanderkroft D, Wei-Chi S. Effectiveness of interventions for undernourished older inpatients in the hospital setting. Best Pract. 2007;11:1-4.

DiMaria-Ghalili RA, Amella E. Nutrition in older adults. Am J Nurs. 2005 Mar;105(3):40-50; quiz 50-1. [37 references] PubMed

Guigoz Y, Lauque S, Vellas BJ. Identifying the elderly at risk for malnutrition. The Mini Nutritional Assessment. Clin Geriatr Med. 2002 Nov;18(4):737-57. [120 references] PubMed

Jefferies D, Johnson M, Ravens J. Nurturing and nourishing: the nurses' role in nutritional care. J Clin Nurs. 2011 Feb;20(3-4):317-30. PubMed

National Collaborating Centre for Acute Care. Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition. London (UK): National Institute for Health and Clinical Excellence; 2006 Feb. 54 p. (Clinical guideline; no. 32).

Pichard C, Kyle UG, Morabia A, Perrier A, Vermeulen B, Unger P. Nutritional assessment: lean body mass depletion at hospital admission is associated with an increased length of stay. Am J Clin Nutr. 2004 Apr;79(4):613-8. PubMed

Salva A, Corman B, Andrieu S, Salas J, Vellas B, International Association Of Gerontology/International Academy Of Nutrition And. Minimum data set for nutritional intervention studies in elderly people. J Gerontol A Biol Sci Med Sci. 2004 Jul;59(7):724-9. [29 references] PubMed

University of Texas, School of Nursing. Unintentional weight loss in the elderly. Austin (TX): University of Texas, School of Nursing; 2006 May. 21 p. [38 references]

Wilson MM, Purushothaman R, Morley JE. Effect of liquid dietary supplements on energy intake in the elderly. Am J Clin Nutr. 2002 May;75(5):944-7. PubMed

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Patient

- Improved nutritional status
- Improved functional status and general well-being

Provider

- Provision of adequate food and fluid in an environment conducive to eating, with appropriate support for people who can potentially chew and swallow but are unable to feed themselves
- Reassessment of patients who are malnourished or at risk for malnutrition
- Appropriate monitoring for refeeding syndrome

Institution

Provision of education and training on the importance of providing adequate nutrition for all health care professionals who are directly involved in patient care

Potential Harms

Aggressive nutritional repletion is associated with refeeding syndrome.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Chart Documentation/Checklists/Forms

Mobile Device Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

DiMaria-Ghalili RA. Nutrition. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 439-52.

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2008 (revised 2012)

Guideline Developer(s)

Hartford Institute for Geriatric Nursing - Academic Institution

Guideline Developer Comment

The guidelines were developed by a group of nursing experts from across the country as part of the Nurses Improving Care for Health System Elders (NICHE) project, under sponsorship of the Hartford Institute for Geriatric Nursing, New York University College of Nursing.

Source(s) of Funding

Hartford Institute for Geriatric Nursing

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

Primary Author: Rose Ann DiMaria-Ghalili, PhD, RN, CNSN, Associate Professor, Drexel University, Philadelphia, PA

Financial Disclosures/Conflicts of Interest

Not stated

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Guideline Availability

Electronic copies: Available from the Hartford Institute for Geriatric Nursing Web site .

Copies of the book *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 4th edition: Available from Springer Publishing Company, 536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: www.springerpub.com .

Availability of Companion Documents

The following is available:

- *Try This*® - issue 9: Assessing nutrition in older adults. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2012. Electronic copies: Available in Portable Document Format (PDF) from the Hartford Institute of Geriatric Nursing Web site .
- Assessing nutrition in older adults. How to Try This video. Available from the Hartford Institute of Geriatric Nursing Web site .

The ConsultGeriRN app for mobile devices is available from the Hartford Institute for Geriatric Nursing Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on June 17, 2008. The information was verified by the guideline developer on August 4, 2008. This NGC summary was updated by ECRI Institute on June 25, 2013. The updated information was verified by the guideline developer on August 6, 2013.

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